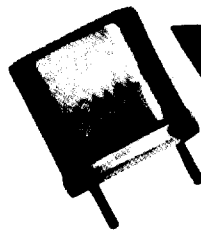


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**BOMAR***Crystal Company*

APR 28 1993

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

March 2, 1993

Federal Communications Commission
Attention: Private Radio Bureau
1919 M Street Northwest
Washington, DC 20654

Replacement of Part 90
by Part 88 to Revise
the Private Land Mobile
Radio Services and Modify
the Policies Governing them.

PR Docket 92-235

To: The Commission

COMMENTS

Bomar Crystal Company
submits its comments
in response to the Commission's notice of Proposed Rule Making in
this proceeding, concerning:

1. Power Restrictions: This proposal, which would require licensees to reduce power depending on height above average terrain, is a two dimensional solution to a three dimensional problem that will not work and that we strongly oppose.

In most cases, high elevation transmitter sites are surrounded by natural obstacles such as other mountains. Environmental, economic and zoning concerns often prohibit use of the best transmitter site. Consequently, many transmitters are located miles away from the desired coverage area. To compensate for these factors, a licensee must use sufficient power to cope with geographic realities.

Air pollution and other exogenous factors can cause a dramatic loss of signal strength at the mobile receiver. Losses of 20 to 30 DB are frequently noted in the Los Angeles area during periods of high air pollution. Snow and ice on the antenna in winter can decrease the performance of the system as can foliage and trees during the growth season.

Conditions around the receiver -- which, in a mobile unit, change continually -- often restrict reception. Clearly, radio systems must be designed to include sufficient reserve gain to have the dynamic range to reach its mobile receivers undiminished by variable environmental factors.

Under the Commission's proposal, specifying licensed output in terms of effective radiated power (ERP) would impose a subjective theoretical standard on the real world where it well may not be applicable. Line loss, antenna gain and directional distortions caused by the tower on which the antenna is mounted often will severely distort the realities of the equation.

At the present time, the mobile area of operation for many licensees is 75 miles around a base station or repeater. As this fact is recognized in existing licenses, the FCC should permit licensees to use adequate power to cover the area of operation specified in the license unaffected by the unreasonable low power limits described in the notice of proposed rulemaking.

2. Channel Splitting: The Commission's proposal, to reduce spacing to 5 kilohertz (khz) in VHF and 6.25 khz in UHF, is incompatible with mobile two-way radio systems. We strongly oppose this proposal unless and until new technology is tested, proven and readily available. These band widths are inappropriate because:

First, mobile communications begin and end with human speech. An extremely narrow bandwidth does not convey the audio quality and intelligibility needed to communicate speech effectively. Unless users are willing to utilize only non-voice data transmissions, channel spacings of 5 or 6.25 khz are unrealistic.

Second, channel spacings of 5 or 6.25 khz will result in interference to and from adjacent channels. Such channel spacings now work with microwave multiplex equipment only because those systems operate with carefully controlled, identical power levels. With continuously changing power levels encountered in mobile systems, interference will reach unacceptable levels.

Third, existing FM specifications provide proven, reliable and accepted standards for the industry. However, there is no standard for the type of equipment required by this proposal. Only one manufacturer has type-accepted equipment for the 220 band on which these technical standards apply.

That equipment, which is single side band (SSB), is unacceptable to most users because of its poor audio quality. Moreover, this equipment has not been proven on a large scale as no licenses have been issued on the 220 band. Although long available for the 150 band, it has not gained wide-spread acceptance due to poor voice quality.

The cellular telephone industry is now testing both digital and analog time-division equipment in an effort to develop standards for narrow band transmission. Reports indicate that those systems that have been installed are providing less than satisfactory results.

We oppose implementation of channel spacing of 5 and 6.25 khz on the 150 to 512 bands until: such standards have been proven on the 220 band; an industry consensus has emerged for technology that meets these standards; and, manufacturers have proven equipment ready to be marketed.

3. Frequency Stability: The FCC's proposal, which would tighten frequency stability to one part per million (PPM) on mobile units, serves no useful purpose. The difference in performance from existing equipment, particularly in the 150 to 174 megahertz band will not be apparent. No commonly available test equipment is capable of accurately measuring compliance with the fixed station standard of 0.1 ppm. We oppose this proposal as it will only serve to make obsolete all existing radios and to make new radios far more expensive.

4. Frequency Coordination: The commission's proposal, which would cut the number of coordinators from 19 to three, would wreak havoc on the frequency coordination system. The current system, which developed over many years, is generally accepted as fair and efficient. It permits various industries as well as state and local governments to have reasonable assurance that they will be able to obtain a frequency when needed and have a voice in the rule-making process.

To take this system, which works well, and scrap it in favor of one in which three groups would exert dictatorial power from centralized locations over the nation's use of private radio frequencies is to invite inefficiency, conflict and abuse of power. In particular, industrial and commercial users of two-way radios would be at a disadvantage in the proposal as they would all be placed in a single pool for frequency coordination and might not be able to obtain frequencies when needed.

Although the current rules provide for licensing of cooperatives, this will be eliminated under the new proposal. These co-ops add efficiency to the licensing and coordination process.

The presence of a de facto coordinator on the scene ensures that frequency utilization within the spectrum licensed to the co-op is optimized. Elimination of this provision of the rules will